



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Reissue Application For: United States Patent No. 5,804,184

Title: TRANSGENIC PATHOGEN-RESISTANT ORGANISM

Patent Appln. Filed: March 6, 1997

Patent Issued: September 8, 1998

Assignee: Max-Planck-Gesellschaft zur Förderung der Wissenschaften, e.V.,  
Göttingen, Germany

Patent Group Art Unit: 1652

Reissue Applicants: Jürgen Logemann, Guido Jach, Birgit Görnhardt, John Mundy,  
Jeff Schell, Peter Eckes and Ilan Chet

Reissue Serial No.: to be assigned

Reissue Appln. Filed: herewith

REISSUE APPLICATION, DECLARATION AND POWER OF ATTORNEY

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SIR:

WE, Jürgen Logemann, Guido Jach, Birgit Görnhardt, John Mundy, Jeff Schell,  
Peter Eckes and Ilan Chet, the below named inventors, hereby declare as follows:

Our residences, post office addresses and citizenship are as stated below next to our names.

We believe that we are the original, first and joint inventors of the invention described and claimed in United States Letters Patent No. 5,804,184 ("the '184 patent"), entitled "TRANSGENIC PATHOGEN-RESISTANT ORGANISM", which issued on September 8, 1998, and of the above-identified reissue application, which is appended hereto and by which we solicit a reissue patent.

I. REVIEW OF PAPERS AND DUTY OF CANDOR

We have reviewed and understand the contents of the above-identified patent, including the issued claims, and the reissue application appended hereto, including the claims thereof.

We acknowledge the duty to disclose information which is material to the examination of this reissue application, in accordance with 37 C.F.R. §1.56.

II. PRIORITY CLAIM

The above-identified reissue application is based on the '184 patent which is a divisional of U.S.S.N. 457,797, filed June 1, 1995 and now United States Patent No. 5,689,045, which is a continuation of U.S.S.N. 134,416, filed October 8, 1993, abandoned, and we claim priority to these earlier applications under 35 U.S.C. §120. In addition, we claim priority to German Patent Application No. 42 34 131.0, filed October 9, 1992, under 35 U.S.C. §119.

III. OFFER TO SURRENDER ORIGINAL LETTERS PATENT

We and our assignee hereby offer to surrender the original letters patent, or provide an appropriate affidavit or declaration in the event that the original patent is lost, upon an indication of allowability of this reissue patent application.

#### IV. STATEMENT OF INOPERATIVENESS OF THE ISSUED PATENT

We believe the original patent to be potentially inoperative because of error that arose without any deceptive intention on our parts as applicants therefor, which resulted in an erroneous sequence listing. In addition, certain additional errors have been noted, including (i) the omission of an inventor (Chet) from those inventors listed on the patent, despite the fact that inventor Chet had executed the Declaration of Inventorship submitted when the application that matured into the '184 patent was filed (therefore no true change in inventorship is required but the names listed on the patent should be amended); (ii) a misspelling of Assignee's name; and (iii) certain references, cited in the U.S. priority application, and one reference cited as background information in the corresponding German application, were not made of record in the divisional application which issued as the '184 patent.

#### V. SPECIFICATION OF "ERRORS" RELIED UPON AND HOW THEY AROSE

##### A. THE ERRONEOUS SEQUENCE LISTING

The following is a description of the manner in which the errors specified below are believed to have occurred in the Sequence Listing of the '184 patent. Although the following account does not describe our own actions, on information and belief we believe it to be true.

As set forth in the attached copy of the Declaration of Dr. Anna Götte (the "Götte Declaration"; Exhibit 1), submitted in United States Patent Application Serial No. 09/138,873, a divisional application of the '184 patent, the licensee of the above-identified application notified the German Patent Law firm which employs Dr. Götte, Wuesthoff & Wuesthoff, that several errors exist in the nucleic acid and amino acid sequences set forth as SEQ ID NOS:4 and 5 (§4 of the Götte Declaration). Dr. Götte, who was the person responsible for preparing the Sequence Listing, states, in her Declaration, that the basis for these errors was an inadvertent good faith misreading of the nucleic acid sequences present in the original disclosure. When amino acid sequences corresponding to the erroneous nucleic acid sequences were generated by PatentIn computer software, they contained, in two of the three instances, an erroneous amino acid.

SEQ ID NOS: 4 and 5 provide, respectively, the nucleic acid and amino acid sequences of the PSI gene and protein from barley. The errors involve the nucleotide triplet

codons for amino acid numbers 109, 138 and 139 (¶4 of the Götte Declaration). Support from the original specification is provided at page 17, as contained in attachment B of the Götte Declaration, with enlarged views in attachments C and D of the Götte Declaration.

Specifically, in the first error, the triplet encoding amino acid number 109, GGC in SEQ ID NO:4 of the Sequence Listing (see highlighted attachment A of the Götte Declaration), should be GCC. This is supported by the original specification at page 17 line 7 (¶6 of the Götte Declaration). Note that the amino acid numbering differs by +1 because the original methionine residue was assigned a value of -1 in the original specification but is +1 in the Sequence Listing (¶5 of the Götte Declaration). The codon for amino acid number 109, amino acid number 108 in the specification, is GCC, and the encoded amino acid is alanine. Because of inadvertent misreading, this “GCC” was entered into SEQ ID NO:4 as GGC, which encodes for glycine, not alanine. Accordingly, because the PatentIn software translates GGC as encoding glycine, SEQ ID NO:5 erroneously lists glycine as amino acid number 109. This discrepancy between the amino acid listed for position 109 in the specification and that generated by PatentIn is a confirmation that an error had been made, but was inadvertently overlooked until the present. Accordingly, nucleotide number 368 of SEQ ID NO:4 should be changed from G to C, and amino acid number 109 of SEQ ID NO:5 should be changed from Gly to Ala.

In the second error, the triplet encoding amino acid number 138, CTC in SEQ ID NO:4 of the Sequence Listing (see highlighted attachment A and ¶4 of the Götte Declaration), should be CTG. Referring to the original specification at page 17 lines 9 and 10, although cursory examination leads one to understand how Dr. Götte read the triplet as “CTC”, review of an enlarged copy (attachment D of the Götte Declaration) reveals that the third nucleotide of the triplet has a vertical element more consistent with a “G” than a “C” (¶6 of the Götte Declaration), by comparison, for example, with the first nucleotide of the triplet. Accordingly, nucleotide number 456 of SEQ ID NO:4 should be changed from C to G. Note that whether the nucleotide triplet is either CTC or CTG, in view of the degeneracy of the genetic code (attachment E of the Götte Declaration) the encoded amino acid is leucine.

In the third error, the triplet encoding amino acid number 139, CCG in SEQ ID NO:4 of the Sequence Listing (see highlighted attachment A and ¶4 of the Götte Declaration),

should be GCG. As in the second error, review of an enlarged copy (attachment D of the Götte Declaration) reveals that the first nucleotide of the triplet has a vertical element more consistent with a "G" than a "C" (§6 of the Götte Declaration), by comparison, for example, with the middle nucleotide of the triplet. In this case, the error is particularly obvious because the original disclosure at page 17 line 10 clearly indicates that the encoded amino acid is alanine and CCG, according to the genetic code (attachment E of the Götte Declaration) encodes proline. The PatentIn software translated the triplet to encode proline, so that SEQ ID NO:5 erroneously lists proline rather than alanine at the 139 position. Accordingly, nucleotide number 457 of SEQ ID NO:4 should be changed from C to G, and amino acid number 139 of SEQ ID NO:5 should be changed from Pro to Ala.

Correction of the errors is requested.

Applicants submit herewith a revised Sequence Listing in paper and computer readable form. The Sequence Listing has been amended to correct the errors described above and also been updated to reflect the application status, docket number, and the fact that the firm of Brumbaugh, Graves, Donohue & Raymond has been acquired by Baker & Botts, L.L.P. The contents of the paper and computer readable forms of the submitted Sequence Listing are the same and contain no new matter.

#### B. INVENTOR CHET NOT LISTED

Attorneys for Applicants have informed us that the following events transpired.

Attached as Exhibit 2 is a copy of the Transmittal Letter conveying the divisional patent application which eventually issued as the '184 patent. That paper indicates that it conveyed the original signed declaration by the inventors (on p. 1 of the Transmittal) and that the original signed declaration of inventorship bearing applicants' signature was filed on December 15, 1993 (on page 2 of the Transmittal). Attached as Exhibit 3 is a copy of the Response to Missing Parts filed on December 15, 1993, with the Declaration attached. The last page of the submitted Declaration contains the name and signature of Ilan Chet, with the signature dated October 28, 1993. Thus, Ilan Chet is an inventor of the application that issued as the '184 patent.

Ilan Chet was not, however, listed on the Filing Receipt of the above-identified

application (a copy of which is attached as Exhibit 4). The omission of Inventor Chet from the list of inventors was not noticed until the '184 patent issued and the list of inventors was reviewed. It is requested that Inventor Chet be added to the list of inventors upon the reissue of the '184 patent.

C. THE NAME OF THE ASSIGNEE IS MISSPELLED

The proper spelling of Assignee's name is Max-Planck-Gesellschaft zur Förderung der Wissenschaften, e.V.. An incorrect spelling was indicated by attorneys for Applicants on the Issue Fee payment sheet, with (i) the initial hyphens omitted; (ii) "Förderung" misspelled as "Furderung"; (iii) what appears to be a space between "Wissen" and "schaften", and (iv) the final "v" in lower case rather than capitalized. Please enter the correct spelling.

D. REFERENCES WERE NOT MADE OF RECORD

Attorneys for Applicants have informed us that the following events transpired.

Certain references, of record in the parent application but not in the divisional which issued as the '184 patent, had inadvertently not been submitted to the Patent Office during the course of prosecution. This error was only appreciated when the '184 patent was about to issue, and Applicants attempted to withdraw the case from issue, filing a request that a continuation application be filed, and submitting an Information Disclosure Statement. Copies of those papers are attached hereto as Exhibit 5. In addition, in a letter from Wuesthoff & Wuesthoff dated August 31, 1998, Attorneys for Applicants were informed of another reference, Legrand et al., 1987, Proc. Natl. Acad. Sci. U.S.A. 84:6750-6754, which was cited to the German Patent Office in the corresponding German patent application as representing background art. Please make these references, all of which are now listed in the Information Disclosure Statement submitted herewith, of record.

## VI. POWER OF ATTORNEY

Applicants and the assignee hereby appoint the following attorneys of the firm of Baker & Botts, L.L.P., having an address at 30 Rockefeller Plaza, New York, NY 10112 as their attorneys, with full power of substitution and revocation, to prosecute this reissue application and to transact all business in the Patent and Trademark Office connected therewith: Dana M. Raymond, Reg. No. 18,540; Frederick C. Carver, Reg. No. 17,021; Francis J. Hone, Reg. No. 18,662; Joseph D. Garon, Reg. No. 20,420; Arthur S. Tenser, Reg. No. 18,839; Ronald B. Hildreth, Reg. No. 19,498; Thomas R. Nesbitt, Jr., Reg. No. 22,075; Robert Neuner, Reg. No. 24,316; Richard G. Berkley, Reg. No. 25,465; Richard S. Clark, Reg. No. 26,154; Bradley B. Geist, Reg. No. 27,551; James J. Maune, Reg. No. 26,946; John D. Murnane, Reg. No. 29,836; Henry Tang, Reg. No. 29,705; Robert C. Scheinfeld, Reg. No. 31,300; John A. Fogarty, Jr., Reg. No. 22,348; Louis S. Sorell, Reg. No. 32,439; Rochelle K. Seide Reg. No. 32,300; Gary M. Butter, Reg. No. 33,841; Marta E. Delsignore, Reg. No. 32,689; and Lisa B. Kole, Reg. No. 35,225.

Please address all communications regarding this application to:

Lisa B. Kole, Esq.

Baker & Botts, L.L.P.

30 Rockefeller Plaza

New York, NY 10112

VII. DECLARATION

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of the Title 18 of the United States Code, and that such willful and false statements may jeopardize the validity of the application or any patent issued thereon.

Inventor	:	Birgit Görnhardt
Inventor's Signature	:	<u>Birgit Görnhardt</u>
Date of Signature	:	<u>30. Nov. 2003</u>
Residence	:	<u>51145 Köln, Germany</u>
Citizenship	:	Germany
Post Office Address	:	<u>Staelsweg 2</u> <u>D-51145 Köln</u>